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in progress at the Desert Laboratory of the Carnegie Institution and of the reports that are soon to appear. The activities are so numerous and the scientific staff so large that all cannot be mentioned in a brief notice, but some are especially worthy of note.

Studies upon the Salton Sea by MACDOUGAL and several of his associates since 1907 have been very extensive, and include investigations of the soil and rock deposits, yearly analyses of the water as the sea continued to dry up, studies of the action of this water upon vegetable tissues, of the destruction of the flora upon the submerged areas, and of the revegetation of the sterilized islands and beaches. These investigations have given remarkable results from the unique phenomena of this semi-arid region. A few of the reports have appeared and more are to be published very soon. The modification of plants under the specialized conditions of the Salton area are being studied, as well as the effects of various climatic complexes. W. A. CANNON is continuing his investigations of the root characters of desert plants and has also extended his activities to include the roots of trees grown in the coastal climate of California. FORREST SHREVE and his associates have made critical studies of transpirational behavior in many very diverse plants, and also of growth rate and winter temperature in the Santa Catalina Mountains. H. A. SPOEHR has been investigating the photolytic effect of the blue-violet rays and their variations in polar radiation; while B. E. LIVINGSTON, with several assistants, has been making exact studies of the water relations of plants, including both the aerial and the soil conditions. The fruit development of the Cactaceae has been investigated by D. S. JOHNSON and the relationships and distribution of the same family by N. L. BRITTON and J. N. ROSE.—GEO. D. FULLER.

Annals of the Bolus Herbarium.—The first South African journal of botany has just made its appearance under the above title. The editor is Professor PEARSON of the South African College. The first number of the journal contains 40 pages, and it is announced that two parts will probably appear each year, and that four parts will constitute a volume. The reasons for a South African journal of botany are given, and seem to be well taken. The field for botanical investigation in South Africa is very large and but sparsely occupied, and the number of those directly or indirectly interested in botanical work is increasing. The new journal, as its name implies, will be mainly concerned with the botanical work inspired by Dr. BOLUS and with investigations conducted in connection with the Bolus Herbarium. This means that its field will be chiefly the taxonomy, ecology, plant geography, and economic botany of South Africa. There will also be included articles that may prove of assistance to those engaged in teaching botany. In a certain sense the journal will also be an organ of the newly established National Botanic Garden.

The first number contains the following papers: "On the flora of the Great Karasberg," with an introduction by PEARSON giving an account of the region, and a list of plants by F. and L. BOLUS and R. GLOVER; "Novitates

Africanæ," in which a new genus (*Pillansia*) of Iridaceæ is described by L. BOLUS; and "Key to the flora of the Cape Peninsula," by F. and L. BOLUS.—J. M. C.

Annals of the Missouri Botanical Garden.—The present year has been prolific in the appearance of new botanical journals. To the *American Journal of Botany* and the *Annals of the Bolus Herbarium* is now added the *Annals of the Missouri Botanical Garden*. The new journal is a quarterly, the first number being dated March 1914. The journal will provide for the printing of scientific papers which formerly constituted a large part of the annual report of the Missouri Botanical Garden. It will contain only scientific contributions from members of the staff of the Garden, from the faculty and graduate students of the Washington University, and from visiting botanists doing all or part of their work at the Garden. The first number contains the following papers: "The effect of surface films and dusts on the rate of transpiration," by B. M. DUGGAR and J. S. COOLEY; "Some pure culture methods in the algae," by JACOB R. SCHRAMM; "The identification of the most characteristic salivary organism and its relation to the pollution of air," by AUGUST C. NOLTE; "The *Polyporaceæ* of Ohio," by L. O. OVERHOLTS.—J. M. C.

The fresh-water flora of Germany, Austria, and Switzerland.—Part 1 of this series of brochures has appeared.⁷ The five previous parts have been noticed in this journal.⁸ The present part completes the flagellates, the other **groups** of which were presented by PASCHER and LEMMERMANN in part 2. The compact size, excellent illustrations, and well considered analytic keys continue to be features of this excellent work.—J. M. C.

NOTES FOR STUDENTS

Color inheritance.—Continuing his excellent studies on *Melandrium* (*Lychnis*), SHULL⁹ has made a great advance in our knowledge of the inheritance of leaf pigments of the chlorophyll and the carotin-xanthophyll groups. With his characteristic care, the author came to his conclusions only after a very large number of hybrids properly synthesized for the tests desired had been made. The color wheel was used as an aid to the classification of the individuals wherever it was deemed necessary. BAUR's discovery of a general factor for chlorophyll formation (*Z*), without which plants are free from chlorophyll, is confirmed; but his idea that the gene *Z* produces yellow pigment is not supported. Assuming the presence of unanalyzed genes *XX*, then typical

⁷ PASCHER, A., Die Süsswasser-Flora, Deutschlands, Österreichs, und der Schweiz. Part 1. Flagellatae, by A. PASCHER and E. LEMMERMANN. pp. 138. figs. 252. Jena: Gustav Fischer. 1914.

⁸ BOT. GAZ. 56:233. 1913; 57:335. 1914.

⁹ SHULL, G. H., Über die Vererbung der Blattfarbe bei *Melandrium*. Ber. Deutsch. Bot. Gesells. 31:40-80. 1914.